

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Claim 1. (Currently Amended) ~~An isolated A replication-defective chimpanzee vector which is at least partially deleted in E1 and devoid of E1 activity nucleic acid sequence comprising a sequence of nucleotides selected from the group consisting of:~~

- a) SEQ ID NO: 1; and
- b) SEQ ID NO: 2; and
- c) a nucleic acid sequence complementary to the sequence of (a) or (b).

Claim 2. (Currently Amended) ~~An isolated recombinant chimpanzee adenovirus serotype comprising a any combination of hexon and fiber nucleic acid sequence encoding a hexon protein, the nucleic acid sequence sequences selected from the group consisting groups of:~~

- a) a hexon gene sequence selected from the group consisting of SEQ ID NOS: 16-25, 41, 43, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, and 117; and
- b) a fiber gene sequence selected from the group consisting of SEQ ID NOS: 6-15, 42, 44, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76 and 78.

Claim 3. (Currently Amended) ~~An isolated recombinant chimpanzee adenovirus serotype comprising any combination of hexon and fiber a nucleic acid sequence encoding a fiber protein, the nucleic acid sequence sequences derived from an adenovirus selected from the group consisting of: SEQ ID NOS: 6-15, 42, 44, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76 and 78. isolates consisting of ECACC accession numbers 03121201 (ChAd4), 03121202 (ChAd5), 03121203 (ChAd7), 03121204 (ChAd9), 03121205 (ChAd10), 03121206 (ChAd11), 03121207 (ChAd16), 03121208 (ChAd17), 03121209 (ChAd19) and 03121210 (ChAd20).~~

Claim 4. (Currently Amended) ~~A replication defective chimpanzee adenoviral (ChAd) vector comprising a nucleotide sequence derived from an adenovirus selected from the group of isolates consisting of ECACC accession numbers 03121201 (ChAd4), 03121202 (ChAd5), 03121203 (ChAd7), 03121204 (ChAd9), 03121205 (ChAd10), 03121206 (ChAd11), 03121207 (ChAd16), 03121208 (ChAd17), 03121209 (ChAd19) and 03121210 (ChAd20) and a transgene which encodes at least one immunogen operatively linked to regulatory sequences which direct expression of said transgene in mammalian cells, wherein said vector is at least partially deleted in E1 and devoid of E1 activity lacks the nucleotide which~~

~~comprises at least one adenoviral gene selected from the group consisting of adenoviral E1, E2, E3, and E4.~~

Claim 5. (Canceled)

Claim 6. (Currently Amended) ~~A~~ The replication defective ChAd vector of claim 1 which comprises a deletion/disruption in the E1 nucleotide sequence in the region from bp 460 to bp 3542 of SEQ ID NO: 1 or from bp 457 to bp 3425 of SEQ ID NO:2.

Claim 7. (Canceled)

Claim 8. (Currently Amended) The replication-defective ChAd vector according to claim 6 wherein the vector further comprises a ~~deletion/disruption in the E1 nucleotide sequence in the region from bp 460 to bp 3542 of SEQ ID NO: 1 or from bp 457 to bp 3425 of SEQ ID NO:2 and further~~ wherein the vector comprises a transgene encoding at least one tumor associated antigen (TAA) operatively linked to a promoter capable of directing expression of the transgene.

Claim 9-21. (Canceled)

Claim 22. (Currently Amended) A method of eliciting an immune response in a naïve mammal comprising administering to said mammal a sufficient amount of a the ChAd vector of claim 46 which comprises a chimpanzee adenovirus genome containing at least a functional deletion of its E1 gene, a nucleotide encoding a target antigen and a promoter sequence capable of directing expression of the nucleotide sequence encoding the target antigen, wherein administration of the ChAd vector elicits a primary immune response.

Claim 23-29. (Canceled)

Claim 30. (Currently Amended) The method of Claim 27 22 wherein the immune response comprises the production of antigen-specific CD8+ T cells.

Claim 31-34. (Canceled).

Claim 35. (Currently Amended) A method of breaking host tolerance to a self-antigen comprising:

(a) priming a host to respond to a self-antigen by administering a first vaccine composition comprising a nucleotide sequence encoding a self-antigen against which an antigen-specific immune response is desired, thereby eliciting a primed response; and

(b) boosting the primed immune response of step (a) by administering a second vaccine composition comprising a recombinant ChAd vector containing at least a functional deletion of its E1 gene, and in the site of the E1 gene deletion, a sequence comprising a promoter capable of directing expression of DNA encoding the same self-antigen delivered in the priming step, wherein administration of the boosting composition elicits an immune response which has the effect of breaking host tolerance to the self-antigen, wherein the ChAd vector is derived from an adenovirus selected from the group consisting of: ChAd3, ChAd6, ChAd20, ChAd4, ChAd5, ChAd7, ChAd9, ChAd10, ChAd11, ChAd16, ChAd17, ChAd19, ChAd8, ChAd22, ChAd24, ChAd26, ChAd30, ChAd31, ChAd37, ChAd38, ChAd44, ChAd63 and ChAd82.

Claim 36-41. (Canceled)

Claim 42. (Currently Amended) The method of claim 35 wherein the first and second vaccine compositions are both comprise ChAd vectors characterized by different ChAd serotypes.

Claim 43. (New) A recombinant chimpanzee adenoviral (ChAd) vector which is at least partially deleted in E1 and devoid of E1 activity, wherein the adenoviral vector is derived from a chimpanzee adenovirus serotype selected from the group consisting of: ChAd3, ChAd6, ChAd20, ChAd4, ChAd5, ChAd7, ChAd9, ChAd10, ChAd11, ChAd16, ChAd17, ChAd19, ChAd8, ChAd22, ChAd24, ChAd26, ChAd30, ChAd31, ChAd37, ChAd38, ChAd44, ChAd63 and ChAd82.

Claim 44 (New) An isolated host cell comprising the recombinant adenoviral vector of claim 43.

Claim 45 (New) A method for producing recombinant, replication-defective chimpanzee adenovirus particles comprising:

(a) transfecting a recombinant adenoviral vector of claim 1 into a population of cells; and

(b) harvesting the resulting recombinant, replication-defective adenovirus.

Claim 46 (New) The recombinant ChAd vector of claim 43, further comprising a heterologous nucleic acid which encodes at least one immunogen operatively linked to regulatory sequences which direct expression of said heterologous nucleic acid in mammalian cells.

Claim 47 (New) The recombinant ChAd vector of claim 43, wherein the adenoviral vector is derived from ChAd3 or ChAd6.

Claim 48 (New) The recombinant ChAd vector of claim 47, wherein the vector further comprises at least a partial deletion of nucleotide sequences which encode the adenovirus E3 protein.

Claim 49 (New) The recombinant ChAd vector of claim 47, wherein the vector is completely deleted in E1.

Claim 50 (New) The isolated host cell of claim 44, wherein the host cell is a 293 cell or a PER.C6™ cell.